

Abstract

The invention relates to a method for arranging communication
 between terminals (MT1–MT4) and an access point (AP1, AP2) in a
 5 communication system (1) applying data transmission frames (FR).
 The data frames (FR) comprise at least uplink time slots (UL) for
 performing data transmission from the terminals (MT1–MT4) to the
 access point (AP1, AP2), and downlink time slots (DL) for performing
 10 data transmission from the access point (AP1, AP2) to the terminals
 (MT1–MT4) via a wireless communication channel. In the method, the
 terminals (MT1–MT4) can be allocated one or more time slots (702–
 707, 802–807) of said frames. In the method, the spatial signature of at
 least said two terminals (MT1–MT4) is determined, and in at least part
 of said frames (FR), at least partly simultaneous time slots (704–707,
 15 802–804) are allocated to at least two terminals (MT1–MT4). In the
 method, measurements are also taken to estimate the timing and fre-
 quency offsets and the properties of the communication channel, which
 measurements are taken at least partly on the basis of a signal trans-
 mitted by the terminal (MT1) to the access point (AP1, AP2), wherein
 20 the results of said measurements are used to select the terminals
 (MT1–MT4) to which simultaneous time slots (702–707, 802–807) are
 to be allocated. During said measurements, the other terminals (MT1–
 MT4) communicating with the access point (AP1, AP2) do not transmit
 a signal to said access point (AP1, AP2).

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Fig. 3